

Systems of Equations with Three Variables

Solve each system by elimination.

$$\begin{aligned} \boxed{1} \quad & x - y - 2z = -6 \\ & 3x + 2y = -25 \\ & -4x + y = 12 \end{aligned}$$

$$\begin{aligned} \boxed{2} \quad & 2a - 5b + 3c = -4 \\ & 6a + 5b - c = 8 \\ & -b - 4c = -28 \end{aligned}$$

$$\begin{aligned} \boxed{3} \quad & -8x - 8y + 8z = 104 \\ & 7x - 4y + 7z = 8 \\ & -x - 8y - z = 76 \end{aligned}$$

$$\begin{aligned} \boxed{4} \quad & x - 6y + 4z = -12 \\ & x + y - 4z = 12 \\ & 2x + 2y + 5z = -15 \end{aligned}$$

Solve each system by substitution.

$$\begin{aligned} \boxed{5} \quad & \frac{1}{2}x + \frac{1}{2}x = 4 \\ & \frac{1}{2}y + \frac{1}{4}z = 1 \\ & \frac{1}{4}x + \frac{1}{2}z = 5 \end{aligned}$$

$$\begin{aligned} \boxed{6} \quad & 3a - 3b = -6 \\ & c = -3a - 3b + 9 \\ & -4a + 5b + c = 8 \end{aligned}$$

$$\begin{aligned} \boxed{7} \quad & x = 3y - 3z + 8 \\ & z = 4x + 5y - 14 \\ & 3y + 2z = 14 \end{aligned}$$

$$\begin{aligned} \boxed{8} \quad & b = a + c + 5 \\ & c = -3b - 3 \\ & 2a - b = -4 \end{aligned}$$

Systems of Equations with Three Variables

Answer.

$$\begin{aligned} \boxed{1} \quad & x - y - 2z = -6 \\ & 3x + 2y = -25 \\ & -4x + y = 12 \end{aligned}$$

$(-5, -5, 3)$

$$\begin{aligned} \boxed{3} \quad & -8x - 8y + 8z = 104 \\ & 7x - 4y + 7z = 8 \\ & -x - 8y - z = 76 \end{aligned}$$

$(4, 6, 8)$

$$\begin{aligned} \boxed{5} \quad & \frac{1}{2}x + \frac{1}{2}x = 4 \\ & \frac{1}{2}y + \frac{1}{4}z = 1 \\ & \frac{1}{4}x + \frac{1}{2}z = 5 \end{aligned}$$

$(0, 0, -5)$

$$\begin{aligned} \boxed{7} \quad & x = 3y - 3z + 8 \\ & z = 4x + 5y - 14 \\ & 3y + 2z = 14 \end{aligned}$$

$(2, 2, 4)$

$$\begin{aligned} \boxed{2} \quad & 2a - 5b + 3c = -4 \\ & 6a + 5b - c = 8 \\ & -b - 4c = -28 \end{aligned}$$

$(-1, 4, 6)$

$$\begin{aligned} \boxed{4} \quad & x - 6y + 4z = -12 \\ & x + y - 4z = 12 \\ & 2x + 2y + 5z = -15 \end{aligned}$$

$(0, 0, -3)$

$$\begin{aligned} \boxed{6} \quad & 3a - 3b = -6 \\ & c = -3a - 3b + 9 \\ & -4a + 5b + c = 8 \end{aligned}$$

$(1, 3, -3)$

$$\begin{aligned} \boxed{8} \quad & b = a + c + 5 \\ & c = -3b - 3 \\ & 2a - b = -4 \end{aligned}$$

$(-2, 0, -3)$